Job Loss Analysis

ID No: 2000069 **Status:** Closed **Original Date:** 13/Apr/2010
Last Review Date:

Organization:

SBU: GMfg
BU: Global Mfg Shared

Work Type: Technical (Process Engineering)
Title (Work Activity): Catalyst Loading (also can be used for drier absorbent/packing/etc.)
Site/Region:

Personal Protective Equipment (PPE)	Selected	Comments
Proper PPE per your Refinery Guidelines	Y	As required

Reviewers

Reviewers Name	Position	Date Approved
Michelle Johansen	Process Engineering Manager RI Refinery	13/Apr/2010

Development Team

Development Team Member Name	Primary Contact	Position
Aaron Harbison	Yes	Process Engineer
Zac Leeth	No	Process Engineer
Brad Moore	Yes	Lead Process Engineer

Job Steps

No	Job Steps	Potential Hazard	Critical Actions
1	Review the loading diagram	1. Best Practices or lessons learned are at risk for not being implemented. 2. Lessons learned from previous loads or other reactors could be repeated.	1.Review the loading diagram with the BIN leader and catalyst vendor 2. Discuss any issues from the previous runs with previous unit engineer, local SME, or BIN Leader to see if the load can be optimized. Also, refer to shutdown reports for information on the performance of previous catalyst loads.

2	Inventory Catalyst	1. Not enough catalyst to fully load the reactor. 2. Catalyst shipment was incorrect type or size.	1. Make sure that all of the catalyst is inventoried to assure that the complete order did arrive and that an adequate contingency amount is available. 2. Verify the catalyst type and size when inventorying.
3	Pre-load meeting	1. Expectations may not be communicated resulting in the catalyst not loaded as desired or incorrectly.	1. Review the catalyst loading diagram with the loading contractor or maintenance personnel to ensure expectations are accurately communicated. Ensure methods of communication and contact information is shared between the loading contractor and the engineer.
4	Bench Scale checks and COA (vendor certificate of analysis) review.	1. The fines or attrition could be too high and create a DP problem on the run. 2. If the bench density is too high or low there may not be adequate catalyst to fully load the reactor or else you may not be able to load adequate catalyst in the reactor. 3. If the catalyst loading density is too high it could create too much DP and limit unit throughput.	1. The combined fines and attrition should be below 4%. 2. Complete a bench test to check density against historical loads or vendors quotes. Update the loading diagram with any significant density variations. 3. If the density is high check the void spacing to assure that the DP created will not limit the plant.
5	Organize super sacks on site	1. Less chance for confusion or mix ups. 2. Easier to track and keep up with bag count. 3. Unused bags could have the tags removed creating confusion or difficulty in the storage or returning of surplus catalyst.	1. Organize the super sacks according to bed and catalyst type. 2. Number the bags with spray paint in the order that they will be loaded. 3. Ensure that the labels are not removed from the catalyst sack until it is ready to be loaded.
6	Loading diagram distribution	1. Confusion over which version is the most up-to-date version of the loading diagram and what should be loaded where.	1. Minimize the number of copies that are distributed to operations/ maintenance/ contractors. Sign and date each copy, minimize the number of “on the fly” changes with good prep work. Collect all old copies before distributing new copies of loading diagrams.
7	Loading Inspections	1. If frequent loading checks are not done issues can go undiscovered.	1. Periodically stop loading and take an outage, check that the bed is level, and calculate the density to make sure that the loading is proceeding according to plan. Consult with BIN for a recommendation on frequency of outage and density checks.

8	Provide catalyst loading data to Finance and Health, Environmental, and Safety (HES) Group if applicable.	1. Current catalyst load may be improperly amortized causing operating expense issues. 2. Data may need to be updated for HES compliance reports or records. 3. Catalyst load that was removed may not be disposed of properly.	1. Complete catalyst data loading form, specifically with date loaded and expected run length and send to Finance. 2. Call HES and determine if any compliance reports should be changed. 3. Complete catalyst loading form with amount and type of catalyst removed from reactor and provide to HES for disposal requirements.
9	Adequate communication with shift change	1. Path forward not understood by night coverage or confusion on documentation / outages between shifts.	1. Talk to night shift engineering coverage about current outage, shift activities, and upcoming plan for the catalyst load.
10	Update and store the loading document used.	1. If issues are discovered post load, important troubleshooting documents are lost.	1a. Update any changes made to the load on the loading document before storing. 1b. Store the document electronically (or paper) in the normal location for historical records.